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ABSTRACT

The effect of pull out remediation on grade point average (GPA) was studied with high school students receiving special education services. For 30 students receiving pull out remediation and 30 students not receiving the pull out component, data were collected on semester GPA, student gender, year in school, and type of class (alternate or regular program). Pull out remediation was not found to affect GPA significantly. No correlation was found between pull out remediation, gender, junior/senior status, and percent of special classes the student was taking. A literature review on resource class and regular class instruction and student outcomes of mainstreaming is included. (Contains 16 references.) (SW)

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What is the effect of pull out remediation on the grade point average of special education students?

Bruce Bergren

ED 385 066

Special education was developed nearly a century ago to meet the need for instruction of handicapped children and adults. Since the inception of special education, school aged youngsters have been enrolled in special education or regular education. The trend during the 1950s and 1960s was to assign students with mild handicaps into special classes with specially–certified instructors. There was speculation that smaller classes would better meet the academic and social needs of mildly handicapped youngsters. By the end of the 1960s, in parallel with the civil rights movement, placement in special classes was criticized. The criticism of special education questioned whether 'separate but equal' was appropriate. Due to these historical factors, and the passage of Education for All Handicapped Children Act of 1975 (PL 94–142) a mandate for mainstreaming evolved. The mandate called for all special needs youngsters to receive instruction in the least restrictive placement. According to Madden and Slavin (1983), most school districts developed a continuum of special services to complete integration into the regular classroom. The continuum addresses the need to individualize services and allow for the special youngster to receive as much instruction in a regular education classroom as possible. The prescription for instruction involves a variety of student options such as; special class placement, resource room placement, in–class assistance, specialized services, and teacher consultation. The resource room setting is the most commonly used service for all mild handicapped special education students.

The resource room is a classroom whereby special education students are pulled out of a regular classroom for specified remediation. Many believe that a mildly handicapped youngster will have a greater opportunity for success in school through use of a pull out resource program.

According to Leinhardt and Pallay (1982) arguments for keeping mildly handicapped students in regular classroom instruction suggest that separating children overtly stigmatizes them, condemns them permanently to the bottom track, and lowers everyone's expectations for them. In review of ability group instruction Esposito (1973) and Leinhardt (1980) found that students placed in homogeneous low ability group classes do worse than in heterogeneous classes that also include average and high

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ability students.

A study by Calhoun and Elliott (1977) clearly showed that regular class placement had a more positive effect on the achievement of both EMR and ED students than special class placement. The mean achievement scores from pre test to post test analysis showed that over a three year period of time youngsters classified emotional disturbed who were placed in a regular homogeneous classroom setting showed grade equivalent increase on the Stanford Achievement Test from 3.1 to 6.0. Youngsters classified emotionally disturbed (ED) and randomly placed in a heterogeneous classroom setting for special education children showed a grade equivalent increase on the Stanford Achievement Test from 3.6 to 4.3. In the same study, students classified educable mentally retarded (EMR) placed in a regular classroom setting increased their grade equivalent score on the Stanford from 1.7 to 4.5. EMR students in the special education classroom setting increased their grade equivalent scores from 2.1 to 3.5. Student selection was randomly assigned from a waiting list of children eligible for special education who ordinarily would have entered the special education classroom.

Three studies (Sabatino,1971; Galvin et al., 1971; Jenkins & Mayhall, 1976) show students who receive instruction in resource classroom achieve better than students in regular classrooms with no resource support. In these studies, resource students gained at least one year in grade equivalents during one year's instruction. Sabatino and Jenkins used the Wide Range Achievement Test, while Galvin's results were from the California Achievement Test.

Studies comparing special versus regular class placement were analyzed through meta-analysis. Carlberg and Kavale (1980) used standard literature-search procedures to locate studies from Psychological Abstracts, Dissertation Abstracts, ERIC, bibliographies from the studies themselves, and two computer searches of library files. From a pool of 860 documents they selected fifty studies based upon four criteria: 1) educational placement with a category of exceptionally, 2) class placement, 3) a comparison group (eg. regular class), and 4) results of the studies must be reported in such a way that translation to a meta-analysis was possible. The effect size (ES) was calculated for each comparison to quantify the magnitude of effect for experimental intervention. ES is defined as the mean difference between experimental

and comparison groups divided by the standard deviation of the comparison group. An ES of +1.00 is interpreted for a subject at the 50th percentile of the control group and is expected to rise to the 84th percentile of the comparison group after intervention. The calculation is computed as by, ES $= (\bar{X}_e - \bar{X}_c)/SD_c =$ (X special - X regular)/SD regular. The fifty studies yielded 32 ESs. The comparison of special versus regular class placement results were negative, which suggests that special class placement did not improve a child's academic status or social condition with respect to regular class placement. Results by exceptionality comparison show educable mentally retarded (EMR) children with low IQs did not respond as well as their regular class counterparts. On the other hand, behavioral/emotional handicapped (ED/BD) youngsters and learning disabled (LD) children were found to show greater improvement in the special class. Because of low or non existent correlations between study features and ES, several of the hypotheses can be rejected. Overall, the results of existing research, integrated statistically, show special class placement is an inferior alternative to regular class placement. Categorized by exceptionality, results revealed different placements have value depending on the handicapping condition. The ES suggested that LD or ED/BD youngsters were apparently more tractable in the special class than children whose primary disability was low IQ. The findings disclose no justification for placement of low-IQ children (EMR) in special classes. Some justification exists for academic and social gain in the placement of LD and BD/ED children in special classes for instruction.

A meta-analysis by Wang and Baker (1986) reviewed articles published from 1975 through the spring of 1984 that focused on student outcome effects on mainstreaming. This study was concerned with four points: 1) the impact of mainstreaming on learning outcomes for disabled students integrated in regular classes, 2) it must have been published in a professional journal, 3) must have contained sufficient data for quantitative analysis, and 4) pre and post analysis of program effects on mainstreamed disabled students had to exist. Of the pool of 264 studies 11 had sufficient data for a quantitative synthesis. The analysis focused on three categories: 1) attitudinal effects of student self-concept, 2) performance effects of achievement in academic subject areas, and 3) process effects where the type of interaction between teachers and students was measured. Five hundred forty-one students were studied of

which fifty-three percent were classified as mentally retarded (EMR); three percent were learning disabled (LD); nineteen percent were hearing–impaired (HI); and twenty–five percent were students with mixed categories of disability. Results showed that an overall positive effect of mainstraming was found. The 115 mean weighted effect sizes comparing the education outcomes of mainstreamed and non–mainstreamed disabled students 75 (65%) showed positive effects. An ANOVA analysis was performed to determine if any specific approach to mainstreaming impacted the study's mean weighted effect sizes. The results on mainstreaming and resource show that part–time [pull–out] and full time [the provision of special education services in regular classes] outperformed non–mainstreamed disabled students with similar classification. Although not statistically significant, the data suggests that a full–time approach to mainstreaming has a greater positive impact on student success. The author of this study emphasized that the effects of mainstreaming are positive, yet only 11 studies met the criteria for inclusion over a ten-year time span.

Literature on research relating to resource remediation is directly related to mainstreaming practices of special education students. The literature identifies a large number of studies and a wide variety of strategies for remediation. The smorgasbord approach to remediation greatly limits the research on remediation techniques. Another limitation that effects research on treatment are the laws governing special education. Because treatment is mandated prior to implementation, true scientific research rarely occurs. The research seems to suggest positive results for regular classroom instruction in some if not all categories of special education students. The use of pull out remediation is also cited as a positive remediation intervention. Therefore, it is hypothesized that students who receive pull out remediation in the resource room will have a higher grade point average than those students who do not participate in pull out remediation. New approaches for remediation and instruction of special education youngsters need to be researched and compared to current practice to determine the most effective remediation approach.

Statement of the Problem

What is the effect of pull out remediation on the grade point average (GPA) of special education students?

Procedures

Population

The population of this study includes one hundred twenty eight students enrolled at Homewood–Flossmoor High School (H–F) in Illinois. These students are special education students as identified by Individual Educational Plans (IEP's). School district 233 (H–F) consists of one high school with a population of around two thousand three hundred students. Special education students are approximately 6% of the total school enrollment.

This study includes the available sample of one hundred twenty eight students receiving special education services for the fall semester of 1994–1995. Of the sample, forty-eight students are scheduled for remediation via pull–out resource from regular program classes and eighty students do not receive pull–out remediation in the resource room. The gender composite of IEP'd students is thirty-three female and ninety-five male. Sixty–one students are juniors and seniors, while sixty-seven are first year students and sophomores. Thirty–one students are receiving 50% or more of their classroom instruction in alternate program classes.

The procedures for the collection of data associated with the study involve review of student transcripts of special education students. Student data was secured from the district's official school records for evaluation. Data was collected on semester GPA, student gender, pull out remediation, student year in school, and the type of class enrolled, either alternate program or regular program. Data was evaluated for its validity and accuracy. Student data was stratified based upon pull out participation and non pull out participation. A random sample of 30 students each were selected from the pull out remediation group and from the non–pull out remediation group for a total sample of 60 students. A statistic–group comparison was employed.

The findings are tabulated in terms of means and standard deviations. The t test was used to determine the significant (.05) difference between the pull out remediation (Research) group and the non pull out remediation group (Control). An analysis of variance was used to determine whether there is a significant difference between the mean GPA of the students based on dependent variables of gender, percent special education classes enrolled in, and junior/senior status.

Findings of the Study:

The samples for the study included all special education students enrolled full time at Homewood–Flossmoor High School. The sample was stratified according to pull out remediation (research) in the resource room or no pull out (control) remediation in the resource room. A random selection of 30 samples for each group was made from the original stratified group. Grade point averages (GPA) were computed for the 1994 fall semester. A t test ($p < .05$) for two–sample, assuming equal variances was done on these two sets of GPA to determine if pull out remediation was statistically significant on GPA. A simple or one–way, analysis of variance (ANOVA) was used to determine the variance ($p < .05$) between GPAs of the research group, 50% alternate program classes, junior/senior status, and gender. All groups were stratified and a random selection of 30 samples from each group was selected. ANOVA was used to determine whether the results were attributed to variance between groups (variance caused by the treatment) or variance within groups (error variance). Table 1 and Table 2 summarize the results of statistical analyses.

Table 1

t-Test: Two-Sample Assuming Equal Variances

	GPA–CONTROL	GPA–RESEARCH
Mean	2.007	2.169
Variance	0.298	0.832
Observations	30	30
Pooled Variance	0.565	
Hypothesized Mean Difference	0	
df	58	
t	-0.837	
P(T<=t) one-tail	0.203	
t Critical one-tail	1.672	
P(T<=t) two-tail	0.406	
t Critical two-tail	2.002	

Table 2

Anova: Single-Factor

Groups	Count	Sum	Average	Variance
GPA–RESEARCH	30	65.076	2.169	0.832
GPA–CONTROL	30	60.201	2.007	0.298
50% ALT PRO	30	64.713	2.157	0.855
GPA–UPPER CLASS	30	65.893	2.196	0.642
GPA–MALE	30	59.194	1.973	0.461

ANOVA

Source of Variation

	SS	df	MS	F	P-value	F crit
Between Groups	1.264	4	0.316	0.512	0.727	2.434
Within Groups	89.548	145	0.617	58		
Total	90.813	149				

Discussion of Results

Examination of the t–test results show that pull out remediation does not have a statistical significance on grade point average. The –.837 t result at the .05 level of significance indicates that there is no correlation between GPA and pull out remediation for this population.

Examination of ANOVA single factor variation results show that a statistical significance is not evident between groups or within groups. The .512 f result at the .05 level of significance indicates that there is no correlation between pull out remediation, gender, junior/senior status, and percent of special classes enrolled in.

The data from this study supports the null hypothesis: "Special education students who participate in pull out remediation will not have a significantly higher grade point average than those who do not participate in the pull out remediation."

These findings appear consistent to those found in the literature, inconclusive. The meta–analysis studies showed that mainstreaming has some effect on success, however the results were not consistent or statistically significant. Other studies cited resource as a positive instruction approach for handicapped youngsters, with success linked to the type of disability. One study noted that experimental instruction is nearly impossible for students with IEP's. With a special education student, the type of instruction is prescribed at an annual meeting prior to treatment. The goals and objectives of an IEP meeting recommend frequency of remediation and treatment. Assuming the prescribed remediation is accurate would suggest that youngsters who receive pull out remediation do so out of need. Those who do not receive pull out remediation are not in need of this type of remediation.

There is a definite need for more controlled research to determine the efficacy of pull out remediation in comparison to other instruction practices cited in the literature. With a lack of school funding, alternate education programs will influence how public schools provide education for the handicapped. New ideas will provide implications and opportunities for educational research and reform that may produce positive outcomes well into the next century.

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